SANTA CRUZ BIOTECHNOLOGY, INC.

p-NFATc4 (22.S168/170): sc-135770

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The Power to Question

BACKGROUND

NFATc4 (nuclear factor of activated T cells, cytoplasmic, calcineurin-dependent 4) is a member of the nuclear factors of activated T cells DNA-binding transcription complex that influences cytokine gene expression, cardiac hypertrophy and adipocyte differentiation. This complex consists of at least two components: a cytosolic component that translocates to the nucleus upon T cell receptor (TCR) stimulation and an inducible nuclear component. Other members of this family participate in the formation of this complex. NFATc4 plays a role in the inducible expression of cytokine genes in T cells, including the induction of IL-2 and IL-4. p38 MAP kinase phosphorylates multiple residues, including Serine 168 and Serine 170, in the NFAT homology domain of NFATc4.

REFERENCES

1. Yang, T., et al. 2001. Requirement of two NFATc4 transactivation domains for CBP potentiation. J. Biol. Chem. 276: 39569-39576.
2. Yang, T.T., et al. 2002. Phosphorylation of NFATc4 by p38 mitogen-activated protein kinases. Mol. Cell. Biol. 22: 3892-3904.
3. Wilkins, B.J., et al. 2002. Targeted disruption of NFATc3, but not NFATc4, reveals an intrinsic defect in calcineurin-mediated cardiac hypertrophic growth. Mol. Cell. Biol. 22: 7603-7613.
4. Graef, I.A., et al. 2003. Neurotrophins and netrins require calcineurin/NFAT signaling to stimulate outgrowth of embryonic axons. Cell 113: 657-670.
5. Mathew, S., et al. 2004. A ternary complex of transcription factors, Nishéd and NFATc4, and co-activator p300 bound to an intronic sequence, intronic regulatory element, is pivotal for the up-regulation of Myosin light chain-2v gene in cardiac hypertrophy. J. Biol. Chem. 279: 41018-41027.
6. Jayanthi, S., et al. 2005. Calcineurin/NFAT-induced upregulation of the FAS ligand/FAS death pathway is involved in methamphetamine-induced neuronal apoptosis. Proc. Natl. Acad. Sci. USA 102: 868-873.
7. Yang, T.T., et al. 2005. Recruitment of the extracellular signal-regulated kinase/ribosomal S6 kinase signaling pathway to the NFATc4 transcription activation complex. Mol. Cell. Biol. 25: 907-920.
8. Oka, T., et al. 2005. Regulation of calcineurin through transcriptional induction of the calcineurin Aβ promoter *in vitro* and *in vivo*. Mol. Cell. Biol. 25: 6649-6659.

CHROMOSOMAL LOCATION

Genetic locus: NFATC4 (human) mapping to 14q12; Nfatc4 (mouse) mapping to 14 C3.

SOURCE

p-NFATc4 (22.S168/170) is a mouse monoclonal antibody raised against a short amino acid sequence containing dually Ser 168 and Ser 170 phosphorylated NFATc4 of human origin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-135770 X, 200 µg/0.1 ml.

APPLICATIONS

p-NFATc4 (22.S168/170) is recommended for detection of Ser 168 and Ser 170 dually phosphorylated NFATc4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NFATc4 siRNA (h): sc-38115, NFATc4 siRNA (m): sc-38116, NFATc4 shRNA Plasmid (h): sc-38115-SH, NFATc4 shRNA Plasmid (m): sc-38116-SH, NFATc4 shRNA (h) Lentiviral Particles: sc-38115-V and NFATc4 shRNA (m) Lentiviral Particles: sc-38116-V.

p-NFATc4 (22.S168/170) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of p-NFATc4: 140-160 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or Jurkat nuclear extract: sc-2132.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A and Western Blotting Luminol Reagent: sc-2048.

SELECT PRODUCT CITATIONS

1. Zhu, H., et al. 2014. Role of extracellular signal-regulated kinase 5 in adipocyte signaling. J. Biol. Chem. 289: 6311-6322.
2. Sorriento, D., et al. 2018. The amino-terminal domain of GRK5 inhibits cardiac hypertrophy through the regulation of calcium-calmodulin dependent transcription factors. Int. J. Mol. Sci. 19 pii: E861.

RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.